

FLOW SCHEMATIC FOR FIELD SUPPLIED DATA ENTRY AND BASE STATION
OR SERVICE PROVIDER SUPPLIED COMPUTER ASSISTANCE

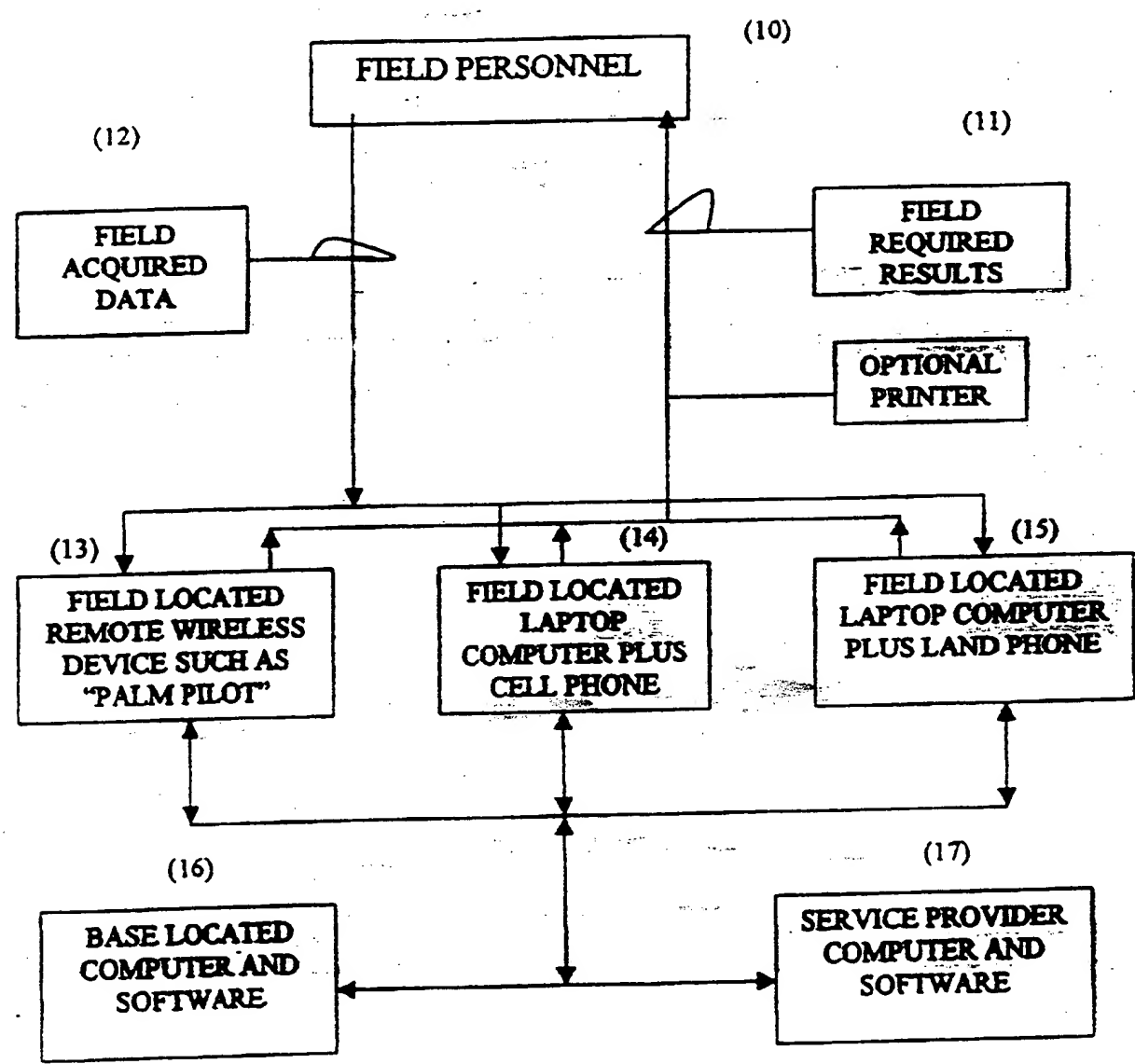


FIG. 1

FOST-65642660

PROGRAMS (18)

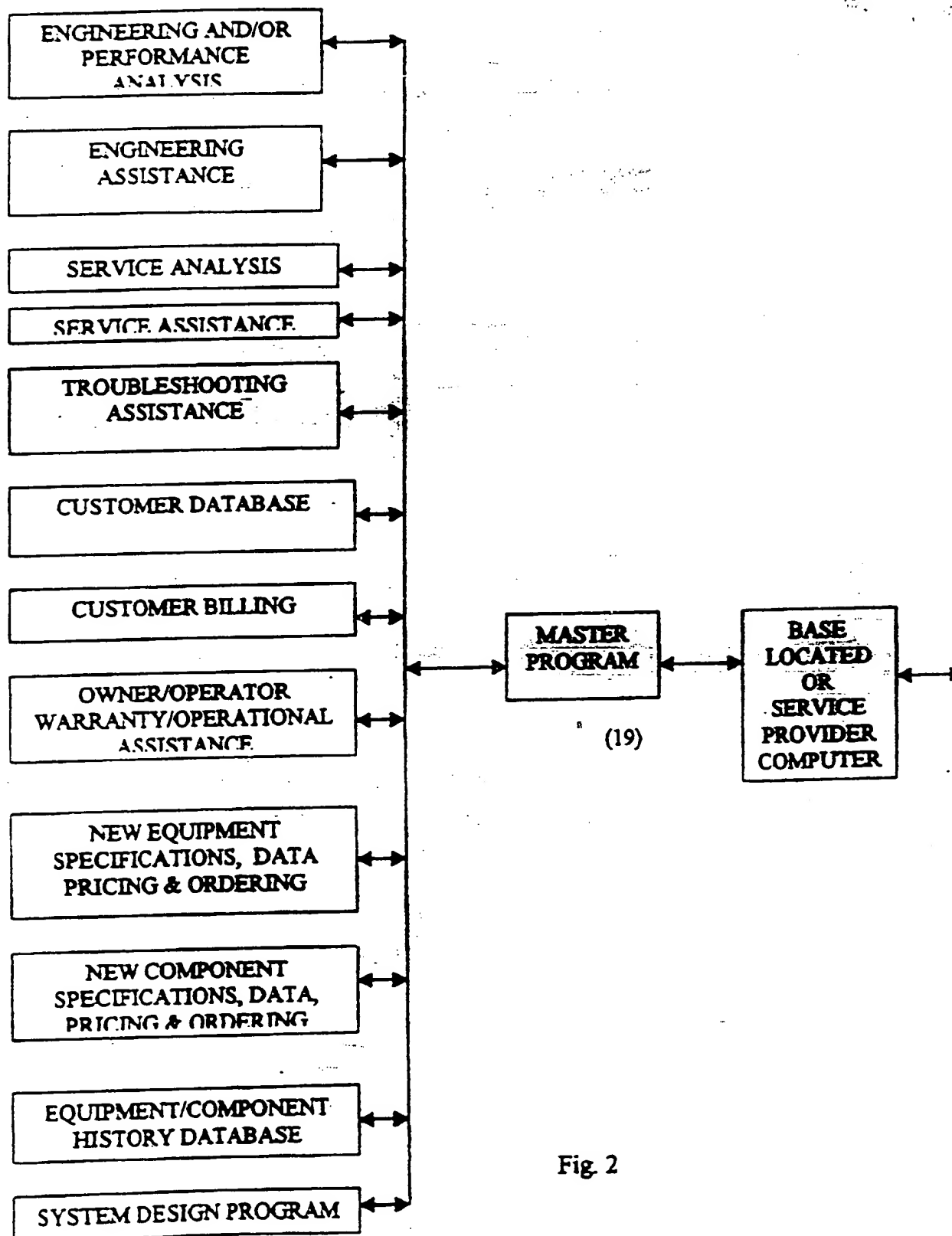


Fig. 2

FOUO "65642660

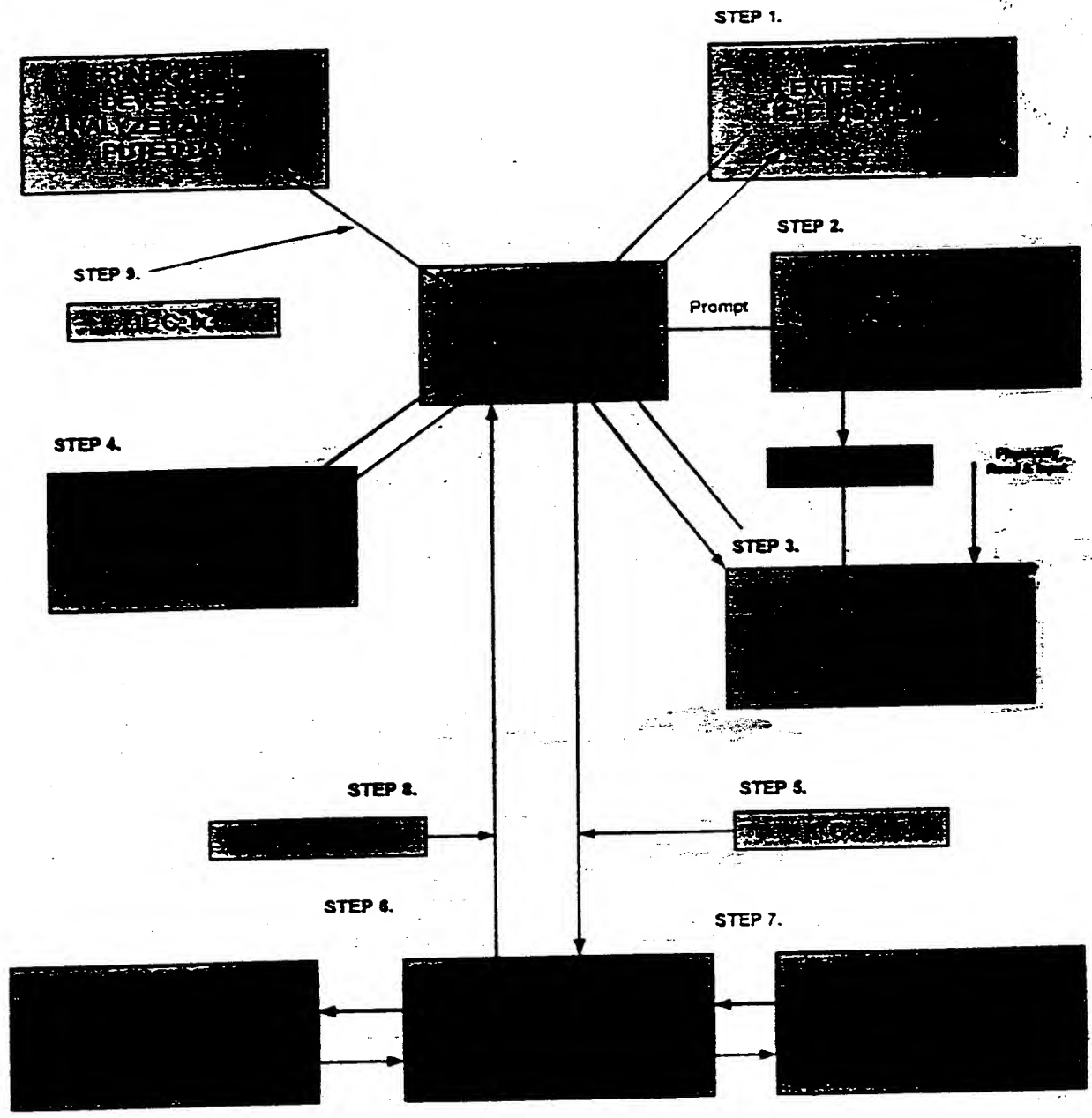


FIG. 3

I. AVAILABLE INFORMATION DATA SHEET:

PART A

TYPE OF ANALYSIS (X which applies): Perf ☐ Trblstg ☐ T & B ☐

Job Name: Phone: Fax:

Job Address: street city state zip

Other: (e-mail) other

Date: Start Time:

Refrigerant Type: Air-cooled (X) ☐ Water-cooled (X) ☐

Unit Number or Specific Location:

Type of System (X): Chiller ☐ Package ☐ Split ☐ A/C ☐ H/P ☐ Refrig ☐

PART B

- Package System
- Chiller/Condenser
- Fan Coil Unit :
- Split System Condenser A/C
- Split System Condenser H/P
- Split System Air Handler
- Refrigeration Unit Condenser
- Refrigeration Unit Evaporator

manuf	quantity	model no	serial no	fan speed

DATA PLATE INFORMATION

	infig	model no	serial no	hp	rpm	FLA/RLA	LRA	volls	phase	hz
Condenser Fan Motor										
Blower Fan Motor										
Compressor No 1										
Compressor No 2										
Compressor No 3										
Compressor No 4										

Main Supply Plenum Dimensions

- Previous Month Electrical Consumption (KW)
- Previous Month System Water Consumption (Gals)
- Previous Month Gas Consumption (Cu Ft)

Return Plenum Dim

Total Cost (\$)

Total Cost (\$)

Total Cost (\$)

FIG- 4a

TO THE HONORABLE SECRETARY OF DEFENSE

(X which applies)

Bad

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[illegible]

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[illegible][illegible]

[illegible]

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FIG. 4b

III. OPERATIONAL DATA SHEET:

Temperatures, Refrigerant (X which applies)	Fahrenheit	Celsius
Hot Gas Discharge at Compressor		
Hot Gas Entering Condenser		
Mid Condenser Coil		
Liquid out of condenser		
Liquid into expansion device		
Mid Evaporator coil		
Suction line after evaporator		
Suction line into compressor		
Heat Pump, Suction line into rev Valve		
Heat Pump, Hot Gas line into rev Valve		

Pressures, Refrigerant (X which applies)	PSIG	PSIA
Hot Gas Discharge @ compressor		
Hot Gas Discharge @ condenser		
Liquid Refrigerant exit condenser		
Liquid Refrigerant enter Exp Device		
Suction Gas exiting evaporator		
Suction Gas entering compressor		

Electrical Data (Running)		Amps			Volts	Phase	hz
		L1	L2	L3			
Compressor No 1							
Compressor No 2							
Compressor No 3							
Compressor No 4							
Condenser Fan Motors							
Quantity							
Blower Motors							
Quantity							
Pumps - Chiller Circ	1						
	2						
Evaporative Tower	1						
	2						
Water Cooled Circ	1						
	2						

Temperatures, Water (X which applies)	Fahrenheit	Celsius
Chiller	EWT	
	LCWT	
Water Cooled Condenser	EWT	
	LWT	

Temperatures, Air (X which applies)	Fahrenheit	Celsius
Air Entering Condenser	DB	
Air Entering Condenser	WB	
Air Exiting Condenser	DB	
Air Entering Evaporator	DB	
Air Entering Evaporator	WB	
Air Exiting Evaporator	DB	
Air Exiting Evaporator	WB	
Air Exiting Air Handler	DB	
Air Exiting Air Handler	WB	

Pressures, Air Flow (in inches water gauge)	
Static before Air Handler	
Static after Air Handler	
Velocity pressure Transverse Avg at straight duct section with dimensions given for main supply or return plenums	

Water Flow Rate (X which applies)	PSIG	PSIA
Chiller, Evaporator	Return Line	
Chiller, Evaporator	Supply Line	
Water Cooled Equip		
Condenser	Return Line	
Condenser	Supply Line	

FIG. 4C

IV. TROUBLE SHOOTING QUESTIONNAIRE DATA SHEET

Mark all those that apply (X)

<input checked="" type="checkbox"/>	Chiller Condenser	<input type="checkbox"/>	Geothermal
<input type="checkbox"/>	Air Cooled	<input type="checkbox"/>	Dual Source
<input type="checkbox"/>	Water Cooled		

Symptom (examples - list to be added to)

<input type="checkbox"/>	Unit will not run
<input type="checkbox"/>	Outdoor unit section will not run
<input type="checkbox"/>	Compressor will not start
<input type="checkbox"/>	Outdoor fan motor will not start
<input type="checkbox"/>	Outdoor unit condenser water pump will not start
<input type="checkbox"/>	Compressor hums but will not start
<input type="checkbox"/>	Compressor cycling on overload
<input type="checkbox"/>	Compressor off on high pressure control
<input type="checkbox"/>	Noisy compressor
<input type="checkbox"/>	Compressor loses oil
<input type="checkbox"/>	No cooling, but compressor runs continuously
<input type="checkbox"/>	Liquid Refrigerant flooding compressor (cap tube system)
<input type="checkbox"/>	Liquid Refrigerant flooding compressor (fixed orifice)
<input type="checkbox"/>	Liquid Refrigerant flooding compressor (TXV)
<input type="checkbox"/>	High head pressure
<input type="checkbox"/>	Low head pressure
<input type="checkbox"/>	High Suction Pressure
<input type="checkbox"/>	Low suction pressure
<input type="checkbox"/>	High operating costs
<input type="checkbox"/>	Other

☐ Water Tower

Symptom (examples - list to be added to)

<input type="checkbox"/>	Fan motor will not run
<input type="checkbox"/>	Cooling return water temperature high
<input type="checkbox"/>	Scale buildup is rapid
<input type="checkbox"/>	Sump water hardness is high
<input type="checkbox"/>	Other

☒ Fan Coil Unit

Symptom (examples - list to be added to)

<input type="checkbox"/>	Fan motor will not run
<input type="checkbox"/>	No cooling, but fan is on
<input type="checkbox"/>	Too much cooling
<input type="checkbox"/>	Other

FIG. 4d

FOST 65642660

☐ Oil Heat

Symptom (examples - list to be added to)

<input type="checkbox"/>	Burner will not start
<input type="checkbox"/>	Burner starts and fires but short cycles
<input type="checkbox"/>	Burner starts and fires but does not heat enough
<input type="checkbox"/>	Burner starts and fires then locks out on safety
<input type="checkbox"/>	Burner starts and fires but no flame is established
<input type="checkbox"/>	Burner starts and fires but loses flame and locks out on safety
<input type="checkbox"/>	Too much heat; burner runs continuously
<input type="checkbox"/>	Too little heat; burner runs continuously
<input type="checkbox"/>	Other

☐ Gas Heat

Symptom (examples - list to be added to)

<input type="checkbox"/>	Unit will not run
<input type="checkbox"/>	Fan will not run
<input type="checkbox"/>	Other

☐ Electric Heat

Symptom (examples - list to be added to)

<input type="checkbox"/>	Unit will not run
<input type="checkbox"/>	Fan will not run
<input type="checkbox"/>	Other

☐ Air Conditioning

<input type="checkbox"/>	Air Cooled	<input type="checkbox"/> Geothermal
<input type="checkbox"/>	Water Cooled	<input type="checkbox"/> Dual Source
<input type="checkbox"/>	Split System	<input type="checkbox"/> Package

Symptom (examples - list to be added to)

<input type="checkbox"/>	Unit will not run
<input type="checkbox"/>	Outdoor unit section will not run
<input type="checkbox"/>	Compressor will not start
<input type="checkbox"/>	2nd stage compressor will not start

FIG. 4e

FOSTF 656426

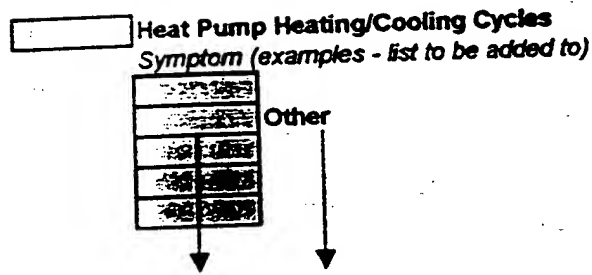
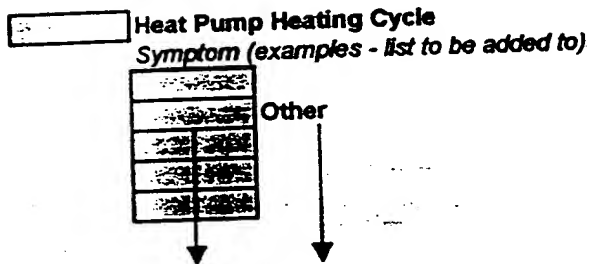
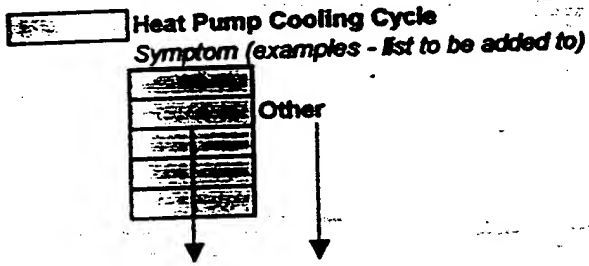
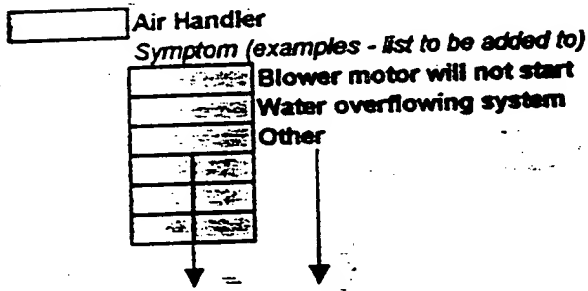
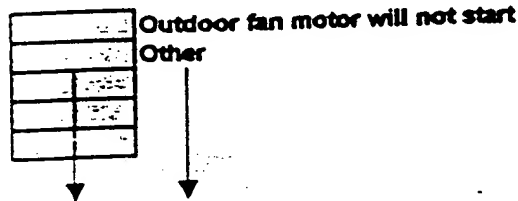


FIG. 4f

TOP SECRET 65642660

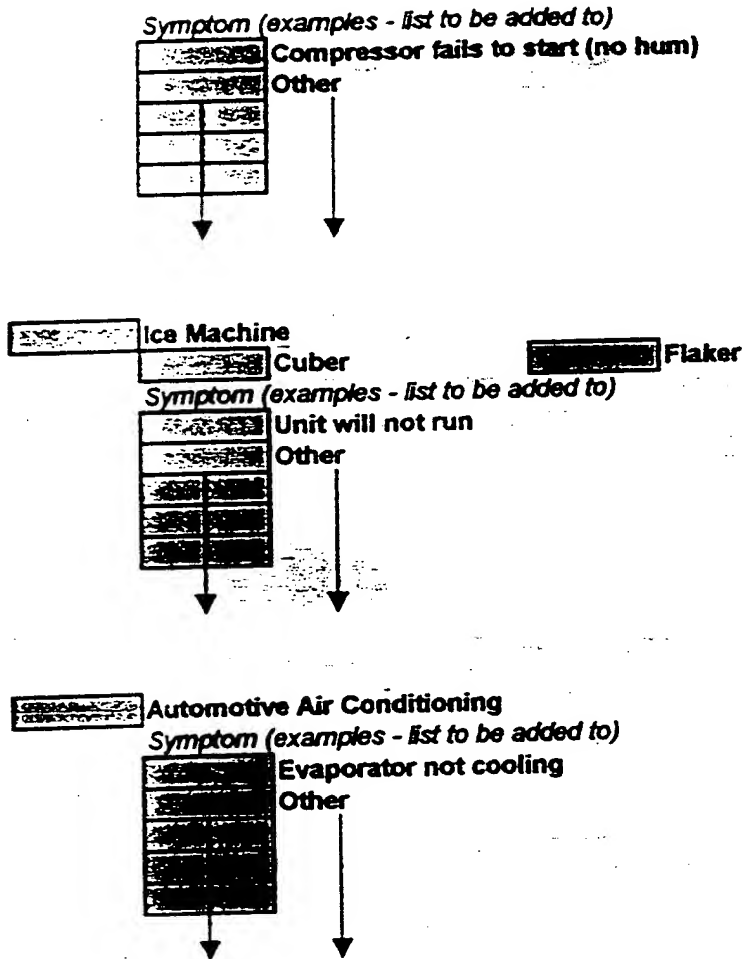



FIG. 4g

SECRET



VAV System



Design Air Flow VAV #1



FIG. 4h

I. AVAILABLE INFORMATION DATA SHEET:

PART A

TYPE OF ANALYSIS (X which applies): Part ☒ Trishtg ☐ T & B ☐

Job Name: XYZ Homeowner Phone: (888) 555-8000 Fax: (888) 555-8000

Job Address: street 3333 Anywhere St. city state zip 32655

Other: (e-mail) WWW.Homeowner.com other

Date: 7/6/01 Start Time: 1:40 PM

Refrigerant Type: R-22 Air-cooled (X) ☒ Water-cooled (X) ☐

Unit Number or Specific Location: Only system of residence

Type of System (X): Chiller ☐ Package ☒ Split ☒ A/C ☐ H/P ☒ Refriger ☐

PART B

Package System
Chiller/Condenser
Fan Coil Unit:
Split System Condenser A/C
Split System Condenser H/P
Split System Air Handler
Refrigeration Unit Condenser
Refrigeration Unit Evaporator

manuf	quantity	model no	serial no	fan speed

DATA PLATE INFORMATION

Condenser Fan Motor									
Blower Fan Motor									
Compressor No 1									
Compressor No 2									
Compressor No 3									
Compressor No 4									
mfg	model no	serial no	hp	rpm	FLA/RLA	LRA	volts	phase	Hz

Main Supply Plenum Dimensions

Previous Month Electrical Consumption (KW)	Previous Month System Water Consumption (Gals)	Previous Month Gas Consumption (Cu Ft)

FIG. 5A

III. OPERATIONAL DATA SHEET:

Temperatures, Refrigerant (X which applies)	Fahrenheit	Celsius
Hot Gas Discharge at Compressor		
Hot Gas Entering Condenser		
Mid Condenser Coil		
Liquid out of condenser		
Liquid into expansion device		
Mid Evaporator coil		
Suction line after evaporator		
Suction line into compressor		
Heat Pump, Suction line into rev Valve		
Heat Pump, Hot Gas line into rev Valve		

Pressures, Refrigerant (X which applies)	PSIG	PSIA
Hot Gas Discharge @ compressor		
Hot Gas Discharge @ condenser		
Liquid Refrigerant exit condenser		
Liquid Refrigerant enter Exp Device		
Suction Gas exiting evaporator		
Suction Gas entering compressor		

Electrical Data (Running)		Amps			Volts	Phase	Hz
		L1	L2	L3			
Compressor No 1							
Compressor No 2							
Compressor No 3							
Compressor No 4							
Condenser Fan Motors							
Quantity							
Blower Motors							
Quantity							
Pumps - Chiller Circ	1						
	2						
Evaporative Tower	1						
	2						
Water Cooled Circ	1						
	2						

Temperatures, Water (X which applies)	Fahrenheit	Celsius
Chiller	EWT	
	LCWT	
Water Cooled Condenser	EWT	
	LWT	

Temperatures, Air (X which applies)	Fahrenheit	Celsius
Air Entering Condenser	DB	
Air Exiting Condenser	WB	
Air Entering Evaporator	DB	
Air Exiting Evaporator	WB	
Air Entering Air Handler	DB	
Air Exiting Air Handler	WB	

Pressures, Air Flow (in inches water gauge)	
Static pressure at main supply	
Static pressure at return	
Velocity pressure at main supply	
Velocity pressure at return	

straight duct section with diameters given for main supply or return plenums

Water Flow Rate (X which applies)	PSIG	PSIA
Chiller, Evaporator Return Line		
Chiller, Evaporator Supply Line		
Water Cooled Equip		
Condenser Return Line		
Condenser Supply Line		

FIG. 5b

FORM 65642660

I. AVAILABLE INFORMATION DATA SHEET:

PART A

TYPE OF ANALYSIS (X which applies): Part ☒ Tribology ☐ T & B ☐

Job Name: ☒ XYZ Homeowner ☐ Phone: ☒ 888-555-0000 Fax: ☒ 888-555-8880

Job Address: street ☒ 3333 Anywhere St. ☐ city ☒ State ☐ zip ☒ 32655

Other: (e-mail) ☒ 12345-Homeowner@xyz.com ☐ other ☐

Date: ☒ 7/6/01 Start Time: ☒ 1:40 PM

Refrigerant Type: ☒ R-22 ☐ Air-cooled (X) ☒ Water-cooled (X)

Unit Number or Specific Location: ☒ Only system at residence ☐ Split ☒ Electric ☒ Oil Heat

Type of System (X): ☒ Chiller ☐ Split ☒ Electric ☒ Oil Heat

A/C ☐ H/P ☒ Refrig ☐

PART B

Package System
Chiller/Condenser
Fan Coil Unit:
Split System Condenser A/C
Split System Condenser H/P
Split System Air Handler
Refrigeration Unit Condenser
Refrigeration Unit Evaporator

manuf	quantity	model no	serial no	fan speed
Evcon	1	BRH2000	77600103	N.A.
Evcon		AN20-078	45560301	N.A.

DATA PLATE INFORMATION

mfgr	model no	serial no	hp	rpm	FLA/LRA	LRA	volts	phase	Hz
A.O. Smith	N.A.	N.A.	V3	1100	N.A.	N.A.	208/230	1	60
A.O. Smith	N.A.	N.A.	V2	1100	5.2	N.A.	208/230	1	60
Bristol	H25A4000A	24V07H572	N.A.	N.A.	21.7	175	208/230	1	60

Main supply air duct dimensions: 20"x24"
Previous Month System Water Consumption (gallons): 1846
Previous Month Gas Consumption (CU FT): 167.94

20"x24"	1846	167.94
Total Cost (\$)		
Total Cost (\$)		

FIG. 6a

III. OPERATIONAL DATA SHEET:

Temperatures, Refrigerant (X which applies)	Fahrenheit	Celsius
	X	
Hot Gas Discharge at Compressor		200
Hot Gas Entering Condenser		
Mid Condenser Coil		
Liquid out of condenser		124
Liquid into expansion device		124
Mid Evaporator coil		
Suction line after evaporator		
Suction line into compressor		75
Heat Pump, Suction line into rev Valve		
Heat Pump, Hot Gas line into rev Valve		

Pressures, Refrigerant (X which applies)	PSIG	PSIA
	X	
Hot Gas Discharge @ compressor		N.A.
Hot Gas Discharge @ condenser		
Liquid Refrigerant exit condenser		275
Liquid Refrigerant enter Exp Device		N.A.
Suction Gas exiting evaporator		
Suction Gas entering compressor		58

Electrical Data (Running)	Amps			Volts	Phase	Hz
	L1	L2	L3			
Compressor No 1	22.2	22.0	—	232	1	60
Compressor No 2						
Compressor No 3						
Compressor No 4						
Condenser Fan Motors	1.6	1.7	—	232	1	60
Quantity	1					
Blower Motors	3.5	3.6	—	232	1	60
Quantity	1					
Pumps - Chiller Circ	1					
	2					
Evaporative Tower	1					
	2					
Water Cooled Circ	1					
	2					

Temperatures, Water (X which applies)	Fahrenheit	Celsius
Chiller	EWT	
	LCWT	
Water Cooled Condenser	EWT	
	LWT	

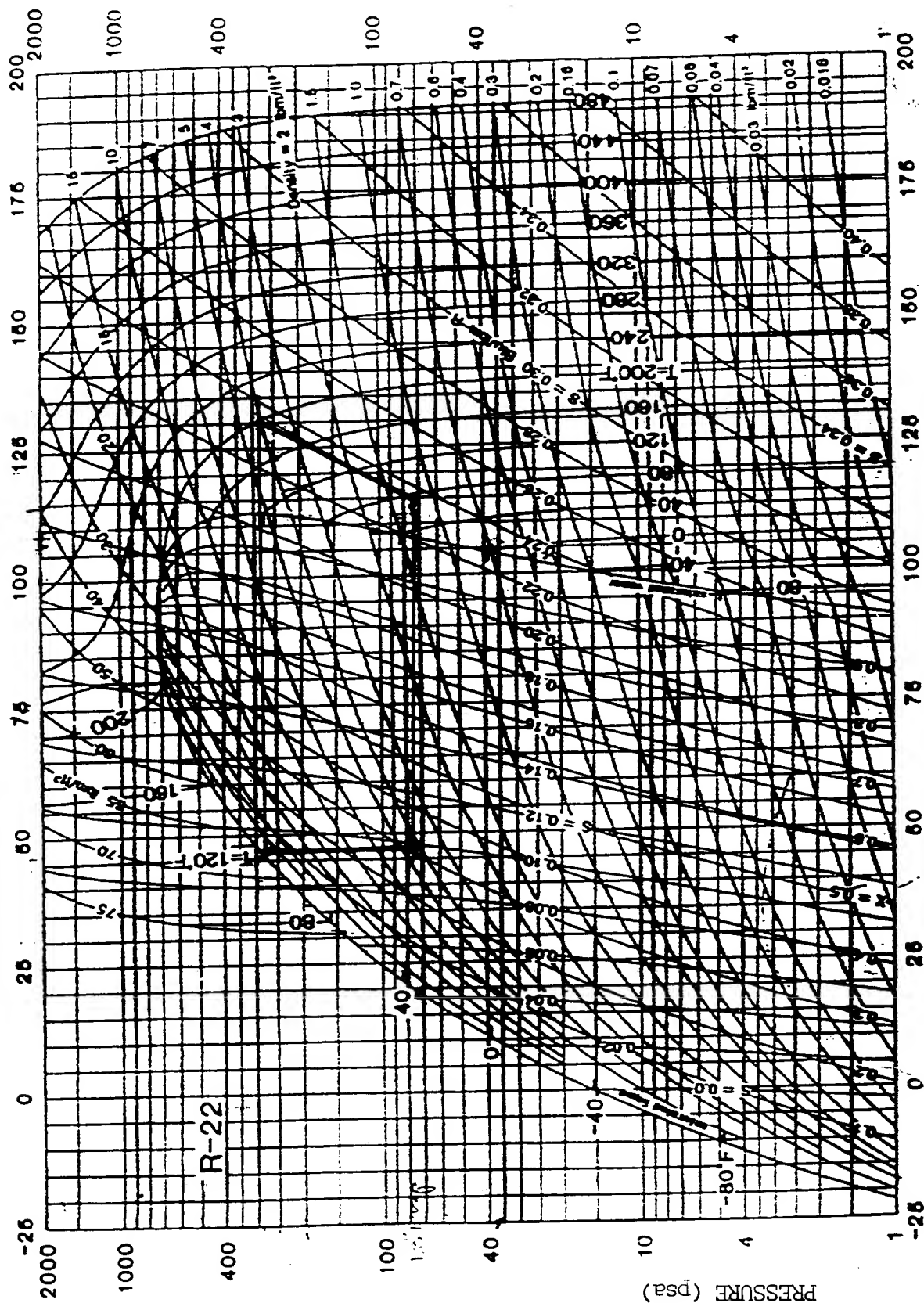
Temperatures, Air (X which applies)	Fahrenheit	Celsius
	X	
Air Entering Condenser	DB	92
Air Entering Condenser	WB	
Air Exiting Condenser	DB	
Air Entering Evaporator	DB	75.0
Air Entering Evaporator	WB	65.0
Air Exiting Evaporator	DB	N.A.
Air Exiting Evaporator	WB	N.A.
Air Exiting Air Handler	DB	59.0
Air Exiting Air Handler	WB	56.4

Pressures, Air Flow (in inches water gauge)	
Static before Air Handler	-1.15
Static after Air Handler	+1.25
Velocity pressure Transverse to flow straight duct section with dimensions given for main supply or return plenums	.033

FIG. 6b

10511" 55642660

ENTHALPY (Btu/lbm)



ENTHALPY (Btu/lbm)

FIG. 7

Thermophysical Properties of Refrigerants

Refrigerant 22 (Chlorodifluoromethane) Properties of Saturated Liquid and Saturated Vapor

Temp., °F	Pressure, psia	Density, lb/ft ³		Enthalpy, Btu/lb		Entropy, Btu/lb-°F		Specific Heat, Btu/lb-°F		Velocity of Sound, ft/s		Viscosity, lb _m /ft-h		Thermal Cond., Btu/h-ft-°F		Surface Tension, dynes/cm	Temp., °F	
		Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor			
-250.00	—	107.37	—	-63.169	76.604	-0.21914	0.44952	—	0.1018	1.2914	—	395	—	—	—	—	-250.00	
-240.00	—	106.41	—	-56.462	77.629	-0.18786	0.42332	—	0.1033	1.2860	—	403	—	—	—	—	-240.00	
-230.00	—	105.48	—	-51.569	78.669	-0.16605	0.40101	—	0.1048	1.2807	—	411	—	—	—	36.75	-230.00	
-220.00	—	104.58	16805	-47.705	79.724	-0.14958	0.38211	—	0.1064	1.2754	—	419	—	—	—	35.70	-220.00	
-210.00	0.002	103.70	6982.5	-44.426	80.796	-0.13616	0.36538	—	0.1080	1.2703	—	427	—	—	—	34.67	-210.00	
-200.00	0.010	102.81	3151.5	-41.474	81.882	-0.12457	0.35048	—	0.1096	1.2653	—	435	—	—	—	33.63	-200.00	
-190.00	0.022	101.92	1527.4	-38.706	82.984	-0.11411	0.33715	—	0.1113	1.2604	—	442	—	—	—	32.61	-190.00	
-180.00	0.044	101.03	787.79	-36.038	84.100	-0.10439	0.32518	—	0.1130	1.2558	—	449	—	—	—	31.59	-180.00	
-170.00	0.084	100.12	429.22	-33.424	85.230	-0.09521	0.31441	—	0.1147	1.2515	—	456	—	—	—	30.58	-170.00	
-160.00	0.151	99.22	245.51	-30.839	86.373	-0.08644	0.30470	—	0.1165	1.2474	—	463	—	—	—	29.57	-160.00	
-150.00	0.262	98.30	146.65	-28.269	87.528	-0.07800	0.29594	—	0.1183	1.2437	—	470	—	—	—	28.57	-150.00	
-140.00	0.435	97.38	91.059	-25.708	88.692	-0.06986	0.28801	—	0.1201	1.2403	—	476	—	—	—	27.57	-140.00	
-130.00	0.696	96.46	58.544	-23.150	89.864	-0.06198	0.28082	—	0.1221	1.2374	—	482	—	—	—	26.59	-130.00	
-120.00	1.080	95.53	38.833	-20.594	91.040	-0.05435	0.27430	0.2535	0.1241	1.2349	3483	488	—	—	—	25.61	-120.00	
-110.00	1.626	94.60	26.494	-18.038	92.218	-0.04694	0.26838	0.2535	0.1262	1.2329	3384	494	—	0.0765	—	24.64	-110.00	
-100.00	2.384	93.66	18.540	-15.481	93.397	-0.03973	0.26298	0.2537	0.1285	1.2315	3290	500	—	0.0749	—	23.67	-100.00	
-90.00	3.413	92.71	13.275	-12.921	94.572	-0.03271	0.25807	0.2561	0.1308	1.2307	3198	505	—	0.0734	0.00292	22.71	-90.00	
-80.00	4.778	91.75	9.7044	-10.355	95.741	-0.02587	0.25357	0.2567	0.1334	1.2303	3110	510	—	0.0718	0.00315	21.76	-80.00	
-70.00	6.555	90.79	7.2285	-7.783	96.901	-0.01919	0.24945	0.2574	0.1361	1.2310	3023	514	—	0.0703	0.00338	20.82	-70.00	
-60.00	8.830	89.81	5.4766	-5.201	98.049	-0.01266	0.24567	0.2584	0.1389	1.2323	2937	519	—	0.0688	0.00360	19.89	-60.00	
-50.00	11.696	88.83	4.2138	-2.608	99.182	-0.00627	0.24220	0.2596	0.1420	1.2344	2852	522	—	0.0673	0.00382	18.96	-50.00	
-40.00	13.383	88.33	3.7160	-1.306	99.742	-0.00312	0.24056	0.2604	0.1436	1.2358	2810	524	—	0.0665	0.00395	18.50	-40.00	
-30.00	14.696	87.90	3.4048	-0.377	100.138	-0.00090	0.23944	0.2609	0.1448	1.2369	2780	525	—	0.0660	0.00401	18.18	-30.00	
-20.00	15.525	87.82	3.2880	0.000	100.296	0.00000	0.23899	0.2611	0.1453	1.2374	2768	526	—	0.0658	0.00404	18.05	-20.00	
-10.00	17.329	87.32	2.9185	1.310	100.847	0.00309	0.23748	0.2620	0.1471	1.2393	2725	527	—	0.0651	0.00414	17.59	-10.00	
0.00	19.617	86.81	2.5984	2.624	101.391	0.00616	0.23602	0.2629	0.1489	1.2414	2683	528	—	0.0643	0.00425	17.14	0.00	
10.00	22.136	86.29	2.3202	3.944	101.928	0.00920	0.23462	0.2638	0.1507	1.2437	2641	530	—	0.0636	0.00435	16.69	10.00	
20.00	24.859	85.77	2.0774	5.268	102.461	0.01222	0.23327	0.2648	0.1527	1.2463	2599	531	—	0.0629	0.00445	16.24	20.00	
30.00	27.924	85.25	1.8650	6.598	102.986	0.01521	0.23197	0.2659	0.1547	1.2493	2557	532	—	0.0622	0.00456	15.79	30.00	
40.00	31.226	84.72	1.6784	7.934	103.503	0.01818	0.23071	0.2671	0.1567	1.2525	2515	533	—	0.0614	0.00466	—	40.00	
50.00	34.821	84.18	1.5142	9.276	104.013	0.02113	0.22949	0.2684	0.1589	1.2560	2473	534	—	0.0607	0.00476	—	50.00	
60.00	38.726	83.64	1.3691	10.624	104.515	0.02406	0.22832	0.2697	0.1611	1.2599	2431	535	0.615	0.0268	0.0600	0.00486	—	60.00
70.00	42.960	83.09	1.2406	11.979	105.009	0.02697	0.22718	0.2710	0.1634	1.2641	2389	535	0.597	0.0271	0.0593	0.00496	—	70.00
80.00	47.538	82.54	1.1265	13.342	105.493	0.02987	0.22607	0.2725	0.1658	1.2687	2346	535	0.580	0.0274	0.0586	0.00506	—	80.00
90.00	52.480	81.98	1.0250	14.712	105.968	0.03275	0.22500	0.2740	0.1683	1.2737	2304	536	0.563	0.0276	0.0579	0.00516	—	90.00
100.00	57.803	81.41	0.9343	16.090	106.434	0.03561	0.22395	0.2756	0.1709	1.2792	2262	536	0.546	0.0279	0.0572	0.00526	—	100.00
110.00	63.526	80.84	0.8532	17.476	106.891	0.03846	0.22294	0.2773	0.1737	1.2851	2219	536	0.530	0.0282	0.0566	0.00536	—	110.00
120.00	69.667	80.26	0.7804	18.871	107.336	0.04129	0.22195	0.2791	0.1765	1.2915	2177	536	0.515	0.0284	0.0559	0.00546	—	120.00
130.00	76.245	79.67	0.7150	20.275	107.769	0.04411	0.22098	0.2809	0.1794	1.2984	2134	535	0.499	0.0287	0.0552	0.00555	—	130.00
140.00	83.280	79.07	0.6561	21.688	108.191	0.04692	0.22004	0.2829	0.1825	1.3059	2091	535	0.484	0.0290	0.0545	0.00565	—	140.00
150.00	90.791	78.46	0.6029	23.111	108.600	0.04972	0.21912	0.2849	0.1857	1.3141	2048	534	0.470	0.0292	0.0538	0.00575	—	150.00
160.00	98.799	77.84	0.5548	24.544	108.997	0.05251	0.21821	0.2870	0.1891	1.3229	2005	533	0.456	0.0295	0.0532	0.00584	—	160.00
170.00	107.32	77.22	0.5111	25.988	109.379	0.05529	0.21732	0.2893	0.1927	1.3324	1962	532	0.442	0.0298	0.0525	0.00594	—	170.00
180.00	116.38	76.58	0.4715	27.443	109.748	0.05806	0.21644	0.2916	0.1964	1.3428	1919	531	0.429	0.0301	0.0518	0.00604	—	180.00
190.00	126.00	75.93	0.4355	28.909	110.103	0.06082	0.21557	0.2941	0.2003	1.3540	1876	530	0.416	0.0303	0.0512	0.00613	—	190.00
200.00	136.19	75.27	0.4026	30.387	110.441	0.06358	0.21472	0.2967	0.2045	1.3663	1832	528	0.404	—	0.0505	0.00623	—	200.00
210.00	146.98	74.60	0.3726	31.877	110.761	0.06633	0.21387	0.2994	0.2089	1.3796	1788	527	0.392	—	0.0499	0.00632	—	210.00
220.00	158.40	73.92	0.3451	33.381	111.066	0.06907	0.21302	0.3024	0.2135	1.3941	1744	525	0.380	—	0.0492	0.00642	—	220.00
230.00	170.45	73.22	0.3199	34.898	111.350	0.07182	0.21218	0.3055	0.2185	1.4100	1700	523	0.369	—	0.0486	0.00652	—	230.00
240.00	183.17	72.51	0.2968	36.430	111.616	0.07456	0.21134	0.3088	0.2238	1.4275	1655	520	0.358	—	0.0479	0.00661	—	240.00
250.00	196.57	71.79	0.2756	37.977	111.859	0.07730	0.21050	0.3123	0.2295	1.4467	1611	518	0.348	—	0.0473	0.00671	—	250.00
260.00	210.69	71.05	0.2560	39.538	112.081	0.08003	0.20965	0.3162	0.2356	1.4678	1566	515	0.338	—	0.0466	0.00680	—	260.00
270.00	225.53	70.29	0.2379	41.119	112.278	0.08277	0.20879	0.3203	0.2422	1.4912	1520	512	—	—	0.0460	0.00690	—	270.00
280.00	241.14	69.51	0.2212	42.717	112.448	0.08552	0.20793	0.324										

Superheated Vapor — Constant Pressure Tables at Pressure Intervals — R-22
V = volume in cu ft/lb; H = enthalpy in Btu/lb; S = entropy in Btu/(lb°R) (saturation properties in parentheses)

Temp. °F	Absolute Pressure lbf/in.														
	75			80			85			90			95		
	60.304 PSIG (34.13 F)			65.304 PSIG (37.76 F)			70.304 PSIG (41.22 F)			75.304 PSIG (44.53 F)			80.304 PSIG (47.71 F)		
	V	H	S	V	H	S	V	H	S	V	H	S	V	H	S
40	0.72740	107.644	0.22038	0.68318	107.954	0.22029	0.64398	108.244	0.21984	0.60897	108.518	0.21903	0.57751	108.772	0.21848
50	0.74013	108.882	0.22303	0.69782	108.347	0.22107	—	—	—	—	—	—	—	—	—
60	0.78148	110.393	0.22845	0.70822	110.088	0.22454	0.66115	109.798	0.22272	0.61924	109.498	0.22086	0.58165	109.187	0.21928
70	0.78241	112.119	0.22981	0.72820	111.843	0.22793	0.68030	111.584	0.22614	0.63708	111.280	0.22443	0.59844	110.982	0.22277
80	0.80238	113.843	0.23308	0.74780	113.584	0.23125	0.69808	113.322	0.22948	0.65588	113.058	0.22781	0.61081	112.787	0.22599
90	0.82323	115.588	0.23632	0.76708	115.323	0.23460	0.71748	115.076	0.23278	0.67334	114.827	0.23112	0.63381	114.578	0.22883
100	0.84320	117.291	0.23948	0.78605	117.061	0.23770	0.73558	116.829	0.23588	0.69088	116.584	0.23437	0.65948	116.357	0.22981
110	0.86291	119.019	0.24280	0.80477	118.801	0.24083	0.75343	118.582	0.23915	0.70777	118.398	0.23785	0.68887	118.137	0.23082
120	0.88238	120.748	0.24608	0.82325	120.544	0.24382	0.77104	120.338	0.24228	0.72459	120.127	0.24088	0.69381	119.915	0.23317
130	0.90167	122.485	0.24938	0.84152	122.290	0.24686	0.78842	122.093	0.24532	0.74120	121.894	0.24378	0.69882	121.694	0.23528
140	0.92076	124.228	0.25186	0.85980	124.040	0.24985	0.80561	123.853	0.24833	0.75780	123.685	0.24678	0.71462	123.475	0.23831
150	0.93968	125.973	0.25480	0.87751	125.796	0.25290	0.82263	125.618	0.25130	0.77383	125.439	0.24977	0.73015	125.259	0.24081
160	0.95844	127.726	0.25750	0.89528	127.558	0.25582	0.83948	127.389	0.25422	0.78989	127.218	0.25271	0.74650	127.047	0.24328
170	0.97707	129.487	0.26036	0.91286	129.326	0.25889	0.85619	129.165	0.25711	0.80581	129.002	0.25561	0.76071	128.839	0.24548
180	0.99557	131.255	0.26319	0.93034	131.102	0.26154	0.87277	130.948	0.25987	0.82159	130.793	0.25848	0.77578	130.637	0.24786
190	1.0139	133.032	0.26588	0.94770	132.885	0.26435	0.88823	132.738	0.26279	0.83725	132.589	0.26131	0.79073	132.440	0.24980
200	1.0322	134.817	0.26876	0.96495	134.677	0.26712	0.90558	134.535	0.26558	0.85279	134.383	0.26411	0.80558	134.251	0.25271
210	1.0504	136.611	0.27150	0.98209	136.478	0.26987	0.92182	136.341	0.26833	0.86824	136.205	0.26687	0.82029	136.088	0.25548
220	1.0685	138.414	0.27421	0.99915	138.284	0.27258	0.93797	138.154	0.27108	0.88368	138.024	0.26881	0.83482	137.883	0.25823
230	1.0865	140.228	0.27680	1.0161	140.101	0.27529	0.95404	139.977	0.27378	0.89885	139.851	0.27232	0.84948	139.725	0.26084
240	1.1044	142.047	0.27958	1.0330	141.928	0.27795	0.97003	141.808	0.27744	0.92403	141.687	0.27500	0.86393	141.588	0.27383

FIG. 9C

FOSTF 65642660

PERFORMANCE TABLE

BRISTOL COMPRESSORS
MODEL H25A56QCBC 60Hz

REFRIGERANT : R22
DISPLACEMENT : 5.46 CUBIC INCHES
MOTOR : 2 -POLE
VOLTAGE : 230-1-60
SUBCOOLING : 15.0 deg F
SUPERHEAT : 20.0 deg F

Release RN: A29905
Revision RN: B15908 Date: 7/94
Preliminary Data

CAPACITY (BTU/HR)

	EVAPORATING TEMPERATURE, deg F															
	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
80	12512	15425	18645	22184	26057	30279	34864	39825	45178	50956	57113	63724	70782	78303	86395	95048
90	11331	14025	17018	20325	23960	27937	32271	36975	42064	47552	53453	59782	66553	73779	81476	89651
100	10079	12554	15322	18398	21796	25530	29614	34063	38890	44110	49737	55785	62269	69203	76600	84475
CONDENSING																
TEMPERATURE																
deg F																
110		11057	13602	16449	19611	23103	26939	31134	35700	40654	46008	51777	57976	64618	71717	79288
120				14520	17648	20700	24290	28231	32539	37227	42310	47802	53717	60068	66872	74141
130						18365	21710	25400	29450	33875	38688	43903	49534	55599	62108	69076
140								22684	26478	30641	35185	40126	45478	51254	57469	64138
150											31846	36514	41586	47077	53000	59371

POWER (WATTS)

	EVAPORATING TEMPERATURE, deg F															
	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
80	2163	2319	2465	2599	2721	2830	2925	3005	3071	3121	3155	3172	3171	3153		
90	2231	2404	2566	2719	2860	2990	3108	3213	3304	3382	3444	3492	3523	3538		
100	2271	2459	2640	2812	2974	3127	3268	3399	3518	3624	3716	3795	3860	3909	3943	3961
CONDENSING																
TEMPERATURE																
deg F																
110		2487	2687	2879	3064	3240	3407	3565	3712	3847	3972	4083	4182	4268	4339	4395
120				2922	3130	3331	3525	3710	3887	4054	4210	4356	4491	4613	4723	4819
130						3400	3621	3836	4043	4242	4433	4614	4785	4946	5096	5234
140								3943	4182	4414	4640	4858	5067	5267	5458	5639
150											4832	5087	5336	5577	5810	6035

CURRENT (AMPS)

	EVAPORATING TEMPERATURE, deg F															
	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
80	9.9	10.6	11.3	11.8	12.3	12.8	13.1	13.4	13.7	13.9	14.1	14.2	14.2	14.3		
90	10.1	10.9	11.6	12.3	12.8	13.4	13.9	14.3	14.6	15.0	15.2	15.5	15.7	15.9		
100	10.1	11.0	11.9	12.6	13.3	13.9	14.5	15.1	15.5	16.0	16.4	16.8	17.1	17.4	17.7	18.0
CONDENSING																
TEMPERATURE																
deg F																
110		11.1	12.0	12.9	13.7	14.4	15.1	15.8	16.4	17.0	17.5	18.0	18.5	19.0	19.4	19.8
120				13.1	14.0	14.8	15.7	16.4	17.2	17.9	18.6	19.2	19.8	20.5	21.1	21.6
130						15.1	16.1	17.0	17.9	18.7	19.5	20.3	21.1	21.9	22.7	23.4
140								17.5	18.5	19.5	20.4	21.4	22.3	23.3	24.2	25.1
150											21.2	22.4	23.5	24.6	25.7	26.8

MASS FLOW (LB/HR)

	EVAPORATING TEMPERATURE, deg F															
	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
80	162.6	199.6	239.7	283.0	329.9	380.4	434.7	493.0	555.5	622.4	693.9	770.1	851.2	937.4		
90	153.9	189.5	228.3	270.4	316.1	365.5	418.8	476.2	537.9	604.0	674.7	750.2	830.7	916.4		
100	142.2	176.5	214.0	255.0	299.6	347.9	400.3	456.8	517.6	582.9	653.0	727.9	807.9	893.1	983.7	1080.0
CONDENSING																
TEMPERATURE																
deg F																
110		161.3	197.6	237.5	281.0	328.4	379.8	435.4	495.5	560.1	629.5	703.9	783.4	868.2	958.4	1054.4
120				218.7	261.2	307.6	358.2	413.0	472.4	536.3	605.2	679.0	758.1	842.5	932.5	1028.2
130						286.6	336.3	390.4	449.1	512.4	580.7	654.1	732.8	816.9	906.6	1002.2
140								368.4	426.4	489.2	557.0	630.0	708.3	792.1	881.7	977.1
150											534.9	607.5	685.5	769.1	858.5	953.8

FIG. 10

00924959-11501

BLOWER PERFORMANCE DATA

MODEL AH20

Blower Speed	S.C.F.M. at E.S.P.							
	.1	.2	.3	.4	.5	.6	.7	.8
High	2125	2100	2055	2020	1980	1930	1870	1820
Med. High	1730	1710	1685	1675	1655	1620	1600	1585
Low	1385	1375	1365	1360	1345	1280	1300	1280

Note: C.F.M. deliveries shown are with filter and coil in place.

FIG. 12

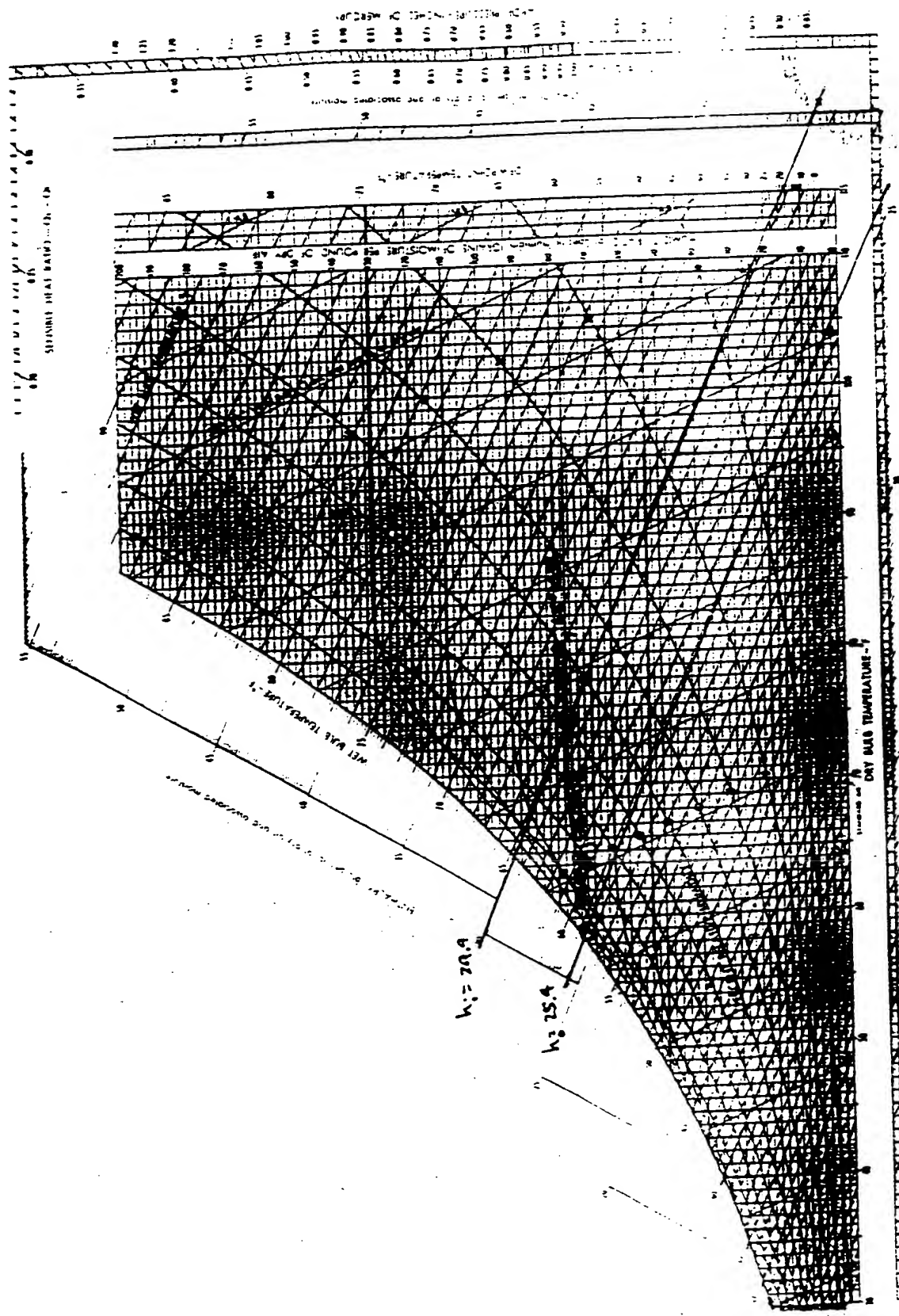
T05TF"55642660

FOOT" 65642660

COOLING PERFORMANCE DATA																
HEAT PUMP MODEL NUMBER		BRHS0608														
INDOOR COIL MODEL NUMBER		U25R60RV														
INDOOR AIR		AIR TEMPERATURE ENTERING OUTDOOR UNIT														
		75°			85°			95°			105°			115°		
		CAPACITY BTU/H			CAPACITY BTU/H			CAPACITY BTU/H			CAPACITY BTU/H			CAPACITY BTU/H		
ID CFM	ID DBWB	TC	SC	KW	TC	SC	KW	TC	SC	KW	TC	SC	KW	TC	SC	KW
1500	85/71	63.7	39.0	4.51	60.4	37.8	4.85	57.1	36.8	5.19	53.7	35.4	5.50	50.2	34.1	5.80
	80/67	58.1	37.4	4.34	55.3	36.3	4.68	52.4	35.1	4.98	49.2	33.8	5.27	46.0	32.5	5.55
	75/63	53.2	36.1	4.22	50.4	34.9	4.52	47.8	33.8	4.81	44.7	32.3	5.08	41.7	31.0	5.30
	73/61	51.1	35.9	4.15	48.5	34.9	4.44	45.9	33.8	4.72	43.0	32.4	4.98	40.1	30.9	5.20
1700	85/71	64.9	41.3	4.55	61.5	40.1	4.89	58.1	38.8	5.23	54.8	37.8	5.54	51.0	36.4	5.85
	80/67	59.3	39.8	4.38	56.3	38.6	4.72	53.3	37.4	5.04	50.1	36.0	5.32	46.8	34.6	5.60
	75/63	54.4	38.1	4.25	51.7	36.9	4.55	48.9	35.7	4.85	45.8	34.3	5.10	42.6	32.8	5.35
	73/61	52.2	38.0	4.20	49.5	36.8	4.49	46.8	35.6	4.77	43.9	34.3	5.01	40.9	32.9	5.25
1900	85/71	65.9	43.4	4.58	62.4	42.2	4.93	58.9	40.9	5.27	55.4	39.7	5.59	51.9	38.4	5.91
	80/67	60.4	41.8	4.43	57.3	40.5	4.76	54.1	39.2	5.08	50.9	37.9	5.36	47.8	36.5	5.64
	75/63	55.5	39.9	4.29	52.6	38.7	4.59	49.6	37.4	4.89	46.4	36.0	5.14	43.1	34.8	5.39
	73/61	53.3	39.9	4.22	50.6	38.7	4.52	47.8	37.4	4.81	44.6	35.9	5.06	41.4	34.4	5.30
NOTE:		All capacities are net with motor fan already deducted at 1200 BTU/H / 1000 CFM.										R/R cooling for outdoor unit only.				

FIG. 13

FOSTT 65642660



INITIALTY - Btu per lb. of dry air and associated moisture

FIG. 11